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ATTACHMENT A

Remarks

Considering the matters raised in the Office Action in the same order as raised, the information about the IDS is noted, including the statement that the IDS is being considered by the Examiner.

With respect to the drawings, corrected drawings are submitted herewith. It is noted that figures including multiple figures have been relabeled so that the different figures are separately labeled, e.g., FIG. 2 has been relabeled FIG. 2A, FIG. 2B, and FIG 2C.

Claims 1, 4, 7-9 and 11 have been rejected under 35 USC 102(b) as being "anticipated by Souza" while claims 10, 2 and 3, and 5 and 6 have also been rejected based on the Souza patent and a further reference. These rejections are respectfully traversed although independent claims 1 and 4 have been amended to more clearly define over the Souza reference.

More specifically, the independent claims have been amended to more clearly define the "conical" configuration of the diaphragm of the valve and thus further distinguish from the Souza patent. The conical-shaped diaphragm is discussed in the application at, for example, page 8, lines 6 and 7 (which refer to a "conical-shaped diaphragm" and page 10, lines 21-23 wherein it is noted that "[I]mportantly, the diaphragm 54 forms around the nozzle 58 to prevent the escape of gasoline vapors from the filter tube or tank." Reference is also made to page 11, wherein the apparatus or tool for molding the valve including the conical-shaped diaphragm is discussed, and to Figures 7-9 wherein this apparatus or tool is illustrated. Page 11 discusses the manufacturing advantage of having the pair of die sections (denoted 82 and 84) symmetrical about their respective longitudinal axis and thus independently rotatable relative to one another. In this regard, page 11, lines 4-7 and lines 20-22, discuss the fact that this configuration permits rotation of one of the die sections 84 relative to the valve 10 and about the longitudinal axis so as to release the injected valve from the tool 80.

Turning to the Souza patent, the Examiner has taken the position that claim 1, for example, "merely recites a 'conical-shaped' diaphragm and the diaphragm in the Souza

reference includes members (16, 16') and a 'flattened' end portion does not render the diaphragm (16, 16') to depart from a 'conical shape' as clearly seen in Fig 2 or Figs. 6(a)-6(c)." While applicant does not necessarily agree with this contention, it is clear that the duck-bill configuration of the Souza patent is different from the conical-shaped configuration of the present invention, and, as indicated above, the claims have been amended to bring out this distinction more clearly. In particular, it is clear that the valve of the Souza patent is not rotationally symmetrical about the longitudinal axis thereof (i.e., a longitudinal axis that passes through the apex of the diaphragm) as recited in the amended claims now presented. Further, the duck-bill configuration of the Souza patent does not permit equal deflection of the lip members at its slit opening, but rather results in unequal forces at the opening about the periphery thereof and, depending on the size of an injector, provides a less effective seal about the injector to prevent reverse flow. Further, this duck-bill configuration does not enable fabrication or manufacturing with dies or other molding sections which are rotatable independently of one another. In other words, the dies used in forming the duck-bill configuration of the Souza patent must be not only aligned axially, but also aligned rotationally, in order to form the duck-bill configuration.

It is also noted that while it is true that, as pointed out by the Examiner, the Souza reference states that the valve could be used as a one-way check valve, the duck-bill configuration of the Souza patent is specifically designed for use as a two-way valve in, for example, the application thereof to a toy balloon. In this application, the slit-like opening 26 can be opened by deforming the main body. A force is applied to the main body in a line parallel to the slit-opening 26 of the duck-bill valve as set forth in column 3, lines 58-60.

Allowance of the application in its present form is respectfully solicited.

ATTACHMENT B

Amendments to the Specification

Please replace the paragraph at the following pages and lines with the following amended paragraphs.

Page 6, lines 21-31:

~~Figure 2 illustrates~~Figures 2A, 2B and 2C illustrate three stages in the general assembly of a non-return valve according to one embodiment of the invention;

~~Figure 3 is~~Figures 3A, 3B and 3C illustrate a general assembly of another embodiment of the invention suitable for use with irrigation tubing;

B1

~~Figure 4 is~~Figures 4A and 4B illustrate a general assembly of a further embodiment of a non-return valve of the invention suitable for use in pneumatic tyres;

~~Figure 5 is~~Figures 5A and 5B illustrate an assembly of a non-return valve of yet another embodiment of the invention suitable for tubeless pneumatic tyres;

Page 7, lines 1-8:

~~Figure 6 is~~Figures 6A and 6B illustrate a general assembly of a non-return valve of another aspect of the invention;

~~Figure 7 is~~Figures 7A, 7B, 7C and 7D illustrate an elevational and part cutaway view of a tool suitable for moulding of the non-return valve;

B2

~~Figure 8 is~~Figures 8A and 8B illustrate a part cutaway together with an enlarged vie of the tool of Figure 7;

~~Figure 9 is~~Figures 9A and 9B illustrate sectional views of the tool of Figure 7 and 8;

Page 7, lines 23-27:

As shown in Figures ~~2~~2A, 2B, 2C to ~~5~~5A, 5B there are various embodiments of a non-return valve shown generally as 10 constructed in accordance with one aspect of the invention. For ease of reference and in order to avoid repetition like components have been designated with the same reference numerals.

B3

Page 8, lines 23 - 35:

B4

Figures ~~2~~2A, 2B, 2C to ~~5~~5A, 5B depict installation of variations on the non-return valve 10 in various applications. The non-return valve 10 of Figure 2 is flared at its inlet 18 and is configured to seat within an internally and externally threaded nipple 24. An externally threaded conduit 26 and an internally threaded conduit 28 then threadably engage the respective male/female threaded nipple 24 so as to form a mater union shown generally as 30. The mated union 30 is designed so that sufficient compression is applied to the valve body 12 to seal it within the nipple 24. It will be appreciated that the non-return valve 10 can be adapted to suit any standard and pre-existing plumbing components such as the threaded nipple 24 and conduits 26 and 28 described.

Page 9, lines 16-35:

~~Figure 4 shows~~Figures 4A and 4B show another variant of the non-return valve 10 which may be substituted for the conventional pneumatic non-return valve 1. In this embodiment the valve body 12 is provided with an external thread 38 for securing the valve 10 within a stem 40. The stem 40 is preferably that of the conventional pneumatic non-return valve 1.

B5

~~Figure 5 shows~~Figures 5A and 5B show installation of the non-return valve 10 of ~~Figure 4~~Figures 4A and 4B in a pneumatic tyre of a tubeless configuration. The valve stem 40 is located in a conventionally fabricated rubber casing 42 which includes an annular channel 44 in which a wheel rim is seated. Alternatively, the rubber casing may be formed integral with the non-return valve 10. In this example the height of the rubber casing 42 or valve body 12 is reduced so that it is stiffened for insertion into the wheel rim. Furthermore, an inner lip 46 of the casing or valve body 12 is reduced in sectional size and profile so as to assist in seating of the channel 44 about the rim.

Page 10, lines 30-34:

B6

Figures ~~7~~7A, 7B, 7C, 7D to ~~9~~9A, 9B schematically illustrate a moulding tool which is appropriate for forming a non-return valve such as 10 described above. The

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tool shown generally as 80 is designed for use in a conventional injection moulding machine.

Page 11, lines 1-35:

The tool 80 includes two (2) mutually engagable die sections 82 and 84. Each of the die sections 82 and 84 includes a shaft and a collar 86/88 and 90/92, respectively. The shaft 86 and collar 88 of one of the die sections 82 is machined together whereas the collar 92 is allowed to rotate on the shaft 90 of the other die section 84. This allows for removal of the tool 80 from the external thread 38 of the non-return valve 10 of this example. The part cut-away view of ~~Figure 7~~Figures 7B and 7C shows in some detail the internal geometry of the tool 80 which defines an internal cavity 94 for injection of the polymeric material. Importantly, a relatively thin projection 96 is connected to the shaft 86 and extends across the apex of the resultant valve 10. This projection 96 thus forms or defines the collapsible opening or aperture 22 of the valve 10.

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~~Figure 8 illustrates~~Figures 8A and 8B illustrate the tool 80 of ~~Figure 7~~Figures 7A, 7B, 7C and 7D in a retracted position with the die section 82 removed from the injected valve 10. The collar 92 of the other die section 84 is then rotated so as to release the injected valve 10 from the tool 80. As the injected polymer cools the membrane or diaphragm 14 is released from the shaft 90 of the other die section 84. However, the shat 90 of the other die section 84 may also include a plunger or other means to assist or aid in removal of the injected valve 10. ~~Figure 8~~Figures 8A and 8B also ~~depicts~~depict injection and relief ports 98 and 100, respectively, which provide a flow of polymer to the die cavity 90. One of the die sections 82 or 84 may also include a dowel pin 102 for interengagement of the die sections 84 and 84. The injector ports 98 provide a discriminate point for polymer to be injected uniformly throughout the cavity 90 of the tool 80. The relief ports 100 allow an even flow and distribution of injected polymer through the die cavity 90.